

## MEMROY DEVICE WITH SECTOR POINTER STRUCTURE

### ABSTRACT OF THE DISCLOSURE

5           A pointer structure on the storage unit of a non-volatile memory maintains a  
correspondence between the physical and logical address. The controller and storage unit  
transfer data on the basis of logical sector addresses with the conversion between the  
physical and logical addresses being performed on the storage unit. The pointer contains  
10           a correspondence between a logical sector address and the physical address of current  
data as well as maintaining one or more previous correspondences between the logical  
address and the physical addresses at which old data is stored. New and old data can be  
kept in parallel up to a certain point. When combined with background erase,  
performance is improved. In an exemplary embodiment, the pointer structure is one or  
15           more independent non-volatile sub-arrays, each with its own row decoder. Each pointer  
has a flag to indicate if it is active in addition to storing the current correspondence  
between a logical address and a physical address and one or more previous  
correspondences. When new data is written, it is written to an available, empty memory  
sector and the pointer is concurrently updated. Defective sectors can be removed from  
20           the pool of available sectors in a row redundancy scheme. A random, binary, or other  
search technique can be used to find the available erased sectors.